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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,437	04/11/2006	Dirk Burdinski	GB03 0186 US1	1847

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EXAMINER

BANH, DAVID H

ART UNIT	PAPER NUMBER
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2854

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,437	Applicant(s) BURDINSKI ET AL.	
	Examiner DAVID BANH	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on August 26, 2009 have been fully considered but they are not persuasive. Applicant argues that, in the Schueller et al. reference "merely teaches removing excess ink from the stamp surface, however, clearly teaches that ink remains absorbed to the stamp surface after contact with the absorbent material". Applicant goes on to further point out that the amended claim now recites "transferring all of the ink from the contact surface of the protruding feature to the surface of the first substrate". Examiner does not dispute what is pointed out in the claim language or as the teaching of Schueller et al. However, this is a piecemeal analysis of the references. The Adams et al. reference teaches drying to evaporate the solvent and leave the molecular ink in each recess with substantially no molecular ink on the stamp surface (see paragraph 10 of Adams et al.). Replacing the process of drying the ink and solvent with the equivalent process of wiping with an absorbent substrate as taught by Schueller et al. still allows for all of the ink to be removed as is shown to be desired by Adams et al., particularly as the stamp taught in this combination has a barrier layer prevents the absorption of ink through the surface into the stamp.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US PG Pub 2005/012902) in view of Applicant's Admitted Prior Art (references made to US PG Pub 2007/0125255 of the present application) and Schueller et al. (US PG Pub 2003/0047535).

Adams et al. teaches a method of patterning a surface of a substrate **18** with ink **15** (paragraph 25), the method comprising the acts of providing an elastomeric stamp **10** having a bulk surface **11** and at least one feature protruding **16** from the bulk surface, the protruding feature **16** having a contact surface **14** and an edge **19** extending from the contact surface **14** extending from the bulk surface **11**. Adams et al. teaches the act of supplying a solution of the ink and a solvent to the surface of the stamp (page 2, paragraph 25), removing the solvent (page 3, paragraph 25, blow drying) wherein the blow drying causes removal of the solvent and removes all of the ink from the surface of the stamp (see paragraph 10 of Adams et al.), providing a second substrate and contacting the surface of the protruding feature with the surface of the second substrate (page 1, paragraph 8) to transfer ink from the edge of the protruding features to the surface of the substrate (see Figure 1A). The surface of the substrate must necessarily have a higher affinity to ink than the surface of the stamp for printing to take place.

Adams et al. does not teach the provision of a barrier layer on the protruding feature surface and the bulk surface. However, Applicant's Admitted Prior Art discloses a PDMS stamp having an oxidized surface layer acting as a barrier layer (page 1, paragraph 9 in the PG Pub of the present application. It would have been obvious to

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one of ordinary skill in the art at the time the invention was made to oxidize the surface layer of the elastomeric stamp to prevent oligomers from diffusing through the surface **14** of the stamp which would pollute the assembled layer of ink molecules deposited on the substrate.

The combination of Adams et al. and the Applicant's Admitted Prior Art does not teach the provision of a first substrate with a surface having higher affinity for the ink than the barrier, contacting the contact surface of the protruding feature with the first substrate, transferring all of the ink from the contact surface of the first substrate and removing the stamp from the surface of the first substrate such that none of the ink remains on the contact surface of the protruding feature of the stamp. However, Schueller et al. teaches in a micro-contacting printing of a stamp on a substrate that after ink has been applied to the surface of a stamp, the ink is dried by use of gas jets, in other words, blow drying, or instead, absorbent material may be pressed into contact with the stamp to dry it (paragraph 51). This drying by pressing to absorbent material would involve the steps of providing a first substrate having a higher affinity to ink than the barrier layer, contacting the contact surface of the protruding feature with the surface of the first substrate, transferring ink from the contact surface of the protruding feature to the surface of the first substrate and removing the elastomeric stamp from the surface of the first substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention to use an absorbent substrate to wipe the ink off of the surface of the protruding feature as an equivalent to drying the stamp with gas jets to remove all of the

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ink from the surface of the protruding feature for the purpose of producing a cleaner stamped image.

For claim 2: The combination of Adams et al., the Applicant's Prior Art and Schueller et al. teaches the method of claim 1. Schueller et al. teaches further the act of removing a part of the surface of the second substrate (paragraph 59, post processing comprising etching), the part being defined by the ink pattern (paragraph 74, etching occurs in portions not protected by SAMs). It would have been obvious to one of ordinary skill in the art at the time the invention was made to subject the printed substrate to post processing involving etching to produce a finished circuit of the appropriate size and having imprinted features of an appropriate depth.

For claim 3: The combination of Adams et al., the Applicant's Prior Art and Schueller et al. teaches the method of claim 2 and Schueller et al. further teaches that the removing step comprises etching (paragraph 59).

For claim 4: The combination of Adams et al., the Applicant's Prior Art and Schueller et al. teaches the method of claim 1 and Adams et al. teaches that the act of providing the surface of the second substrate is performed for a period of time to allow lateral movement over the surface of the second substrate of the ink transferred by the edge (see Fig. 1A of Adams, the ink is transferred from the stamp to the substrate, and has some lateral width on the substrate; since all of the ink is initially on the stamp, there is at least some lateral movement of this ink and since movement cannot occur instantaneously, there is some time frame connected with this movement).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID BANH whose telephone number is (571)270-3851. The examiner can normally be reached on M-Th 9:30AM-8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DHB

/Judy Nguyen/
Supervisory Patent Examiner, Art Unit 2854